

REMARKS

Initially, Applicant's representative wishes to thank the Examiner for the courtesies extended during the telephonic interview conducted on December 17, 2003 and for agreeing to consider and enter or discuss the present claim amendments with Applicant's representative if they are deemed not to place the application in condition for immediate allowance.

Upon entry of this Amendment, claims 19-30 are all the claims pending in the application. Claims 1-18 have been canceled. Claim 30 has been added. Claims 28 and 29 are withdrawn from consideration as being drawn to a non-elected invention. Claims 1-27 presently stand rejected.

The Examiner has again not indicated approval of, or objection to, the Formal Drawings filed on March 8, 2002. Accordingly, Applicant respectfully requests approval of the drawings in the next office action.

Claims 1-9, 12-24 and 27 are rejected again under 35 U.S.C. § 103(a) as being unpatentable over Applicant's "admitted prior art" (AAPA) in view of JP 03069119 (Nakao) and JP 03171616 (Sato) and claims 11 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Nakao and Sato and further in view of Schmidt (USP 5,343,938). For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

Argument

As discussed during the interview held on December 17, 2003, the prior art of record fails to teach or suggest at least a reacting chamber that enables the temperature within to be distributed in a desired manner across the entire susceptor structure. As shown, for example, in

Fig. 4, there are no obstructions directly above or below the center of the susceptor within the chamber that would undesirably effect the temperature controllability within the chamber.

According to claim 19, because the reacting chamber extends across the rotation axis of the susceptor and surrounds the substrate tray retaining sections and, because the area above and below the center of the susceptor is unoccupied, for example by a temperature sensor, unlike the cited prior art devices, a desired temperature distribution in the chamber can be obtained which leads to a more uniform characteristic profile for the product(s) being manufactured. In other words, by constructing the system as claimed, it is possible to eliminate several drawbacks caused by the provision of the center shaft such as described in the specification.

Ryozo Sato (JP03171618) discloses an apparatus that includes a shaft for inserting a thermocouple at the center of the heating means 50. In other words, the areas above and below the center of the susceptor are not *unoccupied* and the reacting chamber, into which the heating means 50 is positioned, does not extend across the rotation axis. Thus, a desired temperature can not be achieved across the susceptor.

Similarly, Yasuki Nakao (JP03059U9) does not disclose the reacting chamber extending across the rotation axis of the susceptor and the temperature control mechanism positioned within the reacting chamber, as claimed.

According to the claimed invention, the central rotation shaft SC for rotating the susceptor 300 is absent from the reaction chamber, as opposed to the conventional rotation/revolution mechanism (Fig. 5). Therefore, the following advantages can be obtained; 1) unlike the conventional devices, the shape of the susceptor is not restricted and it is possible to achieve a desired temperature profile over the susceptor. See Page 30, lines 18-26 of the

specification; 2) in a case where the temperature control mechanism includes a plurality of temperature control devices and one temperature control device is positioned on the extension of the rotation axis of the susceptor (Fig. 4), the temperature around the center portion of the reacting chamber can be readily controlled. See page 7, lines 8-14 of the specification; and, 3) because the central rotation shaft SC is not provided in the claimed invention, an opening S may be formed at the center of the susceptor to lower the temperature at the lower region below the opening S, thereby lowering the temperature around the raw gas inlet portion and restricting decomposing reaction of the raw gas. See Page 33, lines 2-12 of the specification.

As recited, for example, at page 1, lines 17-21 and at page 9, lines 19-24 of the present application, the present invention aims for a *desired temperature distribution* across the entire susceptor. To manufacture products with uniform characteristics, the desired temperature distribution across the susceptor is required.

The “desired temperature distribution” varies depending on the operation conditions, such as raw materials, aimed performance of the products, construction of the apparatus, etc. Therefore, an improvement on the controllability for the temperature distribution has been strongly required in order to achieve a “desired temperature distribution” for each operation condition.

Since the asserted prior art fails to teach or suggest a reacting chamber as claimed in claim 19, Applicant respectfully requests that the prior art rejection of claims 19-29 be withdrawn.

Patentability of New Claim

For additional claim coverage merited by the scope of the invention, Applicant has added new claim 30. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein. For example, for at least the same reason as set forth above in regard to independent claim 19, dependent claim 30 is patentable over the cited prior art. Additionally, none of the prior art references teaches or otherwise suggests a reacting chamber as claimed in claim 19 in combination with a susceptor with a hole in its center.


Support for the subject matter recited in new claim 30 is found in at least Figs. 1 and 4.

Conclusion

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 19-27 and 30, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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